## INTERNATIO L SEARCH REPORT

onal application No. PCT/JP03/04113

| A. CLASSIFICATION OF SUBJECT MATTER Int.Cl <sup>7</sup> B60L11/18                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                       |  |  |
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| According to International Patent Classification (IPC) or to both national classification and IPC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                       |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | B. FIELDS SEARCHED                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                       |  |  |
| Minimum documentation searched (classification system followed by classification symbols)  Int.Cl <sup>7</sup> B60L11/00-11/18                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                       |  |  |
| Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                       |  |  |
| Electronic d                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                       |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | ·                     |  |  |
| C. DOCUM                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | MENTS CONSIDERED TO BE RELEVANT                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                       |  |  |
| Category*                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Citation of document, with indication, where ap                                                                              | propriate, of the relevant passages                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Relevant to claim No. |  |  |
| E,X                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | JP 2002-281685 A (Nissan Die<br>Kabushiki Kaisha Okamura Kenk<br>27 September, 2002 (27.09.02)<br>(Family: none)             | (yusho),                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 1,2,6-8               |  |  |
| E,X                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | JP 2003-70178 A (Denso Corp. 07 March, 2003 (07.03.03), (Family: none)                                                       | .),                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 1,2,6                 |  |  |
| E,A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | JP 2003-32908 A (Nisshinbo ) 31 January, 2003 (31.01.03), (Family: none)                                                     | Industries, Inc.),                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 1-9                   |  |  |
| <b>Y</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | JP 10-84627 A (Honda Motor (<br>31 March, 1998 (31.03.98),<br>(Family: none)                                                 | Co., Ltd.),                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 1-9                   |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                       |  |  |
| Further documents are listed in the continuation of Box C. See patent family annex.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                       |  |  |
| * Special categories of cited documents:  "A" document defining the general state of the art which is not considered to be of particular relevance  "E" earlier document but published on or after the international filing date  "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)  "O" document referring to an oral disclosure, use, exhibition or other means  "P" document published prior to the international filing date but later than the priority date claimed  Date of the actual completion of the international search |                                                                                                                              | priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art |                       |  |  |
| 17 June, 2003 (17.06.03) 01 July, 2003 (01.07.03)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                       |  |  |
| Name and mailing address of the ISA/ Japanese Patent Office                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                              | Authorized officer                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                       |  |  |
| Facsimile No.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                              | Telephone No.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                       |  |  |

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| C (Continua | tion). DOCUMENTS CONSIDERED TO BE RELEVANT                                                                                   |                       |
|-------------|------------------------------------------------------------------------------------------------------------------------------|-----------------------|
| Category*   | Citation of document, with indication, where appropriate, of the relevant passages                                           | Relevant to claim No. |
| Y           | JP 11-82258 A (Honda Motor Co., Ltd.),<br>26 March, 1999 (26.03.99),<br>(Family: none)                                       | 1-9                   |
| Y           | JP 11-196537 A (Hitachi, Ltd.),<br>21 July, 1999 (21.07.99),<br>& EP 932240 A & US 6262561 B                                 | 1-9                   |
| <b>Y</b>    | JP 2000-23306 A (Fuji Electric Co., Ltd., Niss<br>Diesel Motor Co., Ltd.),<br>21 January, 2000 (21.01.00),<br>(Family: none) | an 1-9                |
| Y           | JP 2002-8732 A (Denso Corp., Toyota Motor Corp<br>11 January, 2002 (11.01.02),<br>(Family: none)                             | .),                   |
| A           | JP 2001-28839 A (Denso Corp.),<br>30 January, 2001 (30.01.01),<br>(Family: none)                                             | 1-9                   |
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